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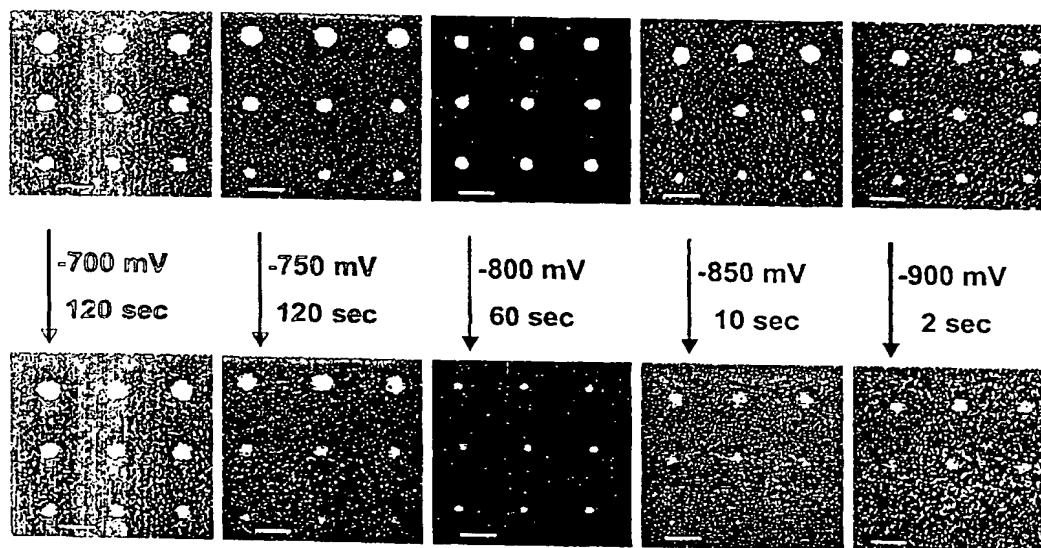
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(54) Title: ELECTROCHEMICAL MINIATURIZATION OF ORGANIC MICRO-AND NANOSTRUCTURES



(57) Abstract: The invention provides a simple and convenient strategy for reducing the dimensions of organic micro- and nanostructures on metal surfaces. By varying electrochemical desorption conditions, organic structures patterned by Dip-Pen Nanolithography or any of the micro-contact printing procedures can be gradually desorbed in a controlled fashion. The electrochemical desorption is initiated at the exterior of the feature and moves inward as a function of time. The desorption process and adsorbate desorption are modified and controlled as a function of substrate morphology, adsorbate head and tail groups, and electrolyte solvent and salt. Different nanostructures made of different adsorbates can be miniaturized based upon judicious selection of adsorbate and supporting electrolyte.

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